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Application No.: 10/608,026
Amendment dated 9/11/07
Reply to Office Action of September 7, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn): A radiation cross-linkable medical angioplasty balloon or radiation cross-linkable medical catheter made from a thermoplastic cross-linkable composition, said thermoplastic cross-linkable composition comprising:

(a) a thermoplastic polymer which is the reaction product of an aromatic polyisocyanate and a polyahl; and

(b) a monomer crosslinker selected from the group consisting of methacrylate monomer crosslinkers and acrylate monomer crosslinkers, for conversion of at least a portion of said thermoplastic polymer to convert said portion from a thermoplastic to a thermoset state upon irradiation of said composition with energy from a radiation source.

2. (Withdrawn): A radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter made by irradiating the radiation cross-linkable medical angioplasty balloon or radiation crosslinkable medical catheter of claim 1 with energy from a radiation source.

3. (Withdrawn): The radiation cross-linkable medical angioplasty balloon or radiation cross-linkable medical catheter of claim 1, wherein said thermoplastic polymer is a thermoplastic elastomer.

4. (Withdrawn): The radiation cross-linkable medical angioplasty balloon or radiation cross-linkable medical catheter of claim 1, wherein said thermoplastic polymer is a block copolymer containing hard and soft segments.

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5. (Withdrawn): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 2, wherein said energy is in the form of radiation selected from the group consisting of beta particles, gamma rays, ultraviolet radiation, electron beam radiation, and combinations thereof.

6. (Withdrawn): The radiation cross-linkable medical angioplasty balloon or cross-linkable medical catheter of claim 1, wherein said monomer cross-linker is selected from the group consisting of trimethylolpropane trimethacrylate, trimethylolpropane triacrylate, tetraethylene glycol dimethacrylate and combinations thereof.

7. (Withdrawn): A radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter made from a cross-linked composition, wherein said cross-linked composition is produced by irradiating a cross-linkable composition comprising:

(a) a thermoplastic polymer which is the reaction product of an aromatic polyisocyanate and a polyahl; and

(b) a monomer crosslinker selected from the group consisting of methacrylate monomer crosslinkers and acrylate monomer crosslinkers, meta-phenylene dimaleimide, and combinations thereof; said monomer crosslinker present in said composition in an amount sufficient to cross-link at least a portion of said thermoplastic polymer to convert said portion from a thermoplastic to a thermoset state upon irradiation of said composition with energy from a radiation source.

8. (Withdrawn): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 7, wherein said thermoplastic polymer is a thermoplastic elastomer.

9. (Withdrawn): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 7, wherein said thermoplastic polymer is a block copolymer containing hard and soft segments.

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10 (Withdrawn): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 7, which is produced by irradiating said cross-linkable composition with energy in the form of radiation selected from the group consisting of beta particles, gamma rays, ultraviolet radiation, electron beam radiation, and combinations thereof.

11 (Withdrawn): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 7, wherein said monomer crosslinker is selected from the group consisting of trimethylolpropane trimethacrylate, trimethylolpropane triacrylate, tetraethylene glycol dimethacrylate and combinations thereof.

12 (Original): A radiation cross-linkable medical angioplasty balloon or radiation cross-linkable medical catheter made from a thermoplastic cross-linkable composition, said thermoplastic cross-linkable composition comprising: (a) a thermoplastic polymer selected from the group consisting of nylon, a copolyester copolymer of poly(1,4-butanediol terephthalate) and poly(alkylene ether terephthalate), a copoly(ether-ester-amide) polymer, and copolymers of polylaurinlactam and polytetrahydrofuran, and a reaction product of an aliphatic polyisocyanate and a polyahl; and (b) a monomer cross-linker comprising acrylate monomer crosslinkers, said monomer cross-linker present in said composition in an amount sufficient to provide cross-linking of at least a portion of said thermoplastic polymer to convert said portion from a thermoplastic to a thermoset state upon irradiation of said composition with energy from a radiation source.

13 (Original): A radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter made by irradiating the radiation crosslinkable medical angioplasty balloon of claim 12 with energy from a radiation source.

14 (Original): The radiation cross-linkable medical angioplasty balloon or radiation cross-linkable medical catheter of claim 12, wherein said thermoplastic polymer is a

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thermoplastic elastomer.

15 (Original): The radiation cross-linkable medical angioplasty or radiation cross-linkable medical catheter balloon of claim 12, wherein said thermoplastic polymer is a block copolymer containing hard and soft segments.

16 (Original): The radiation crosslinked medical angioplasty balloon or radiation cross-linked medical catheter of claim 13, wherein said energy is in the form of free radical initiating or ionizing radiation selected from the group consisting of beta particles, gamma particles, ultraviolet radiation, electron beam radiation, and combinations thereof.

17 (Original): The radiation cross-linkable medical angioplasty balloon or radiation cross-linkable medical catheter of claim 12, wherein said monomer cross-linker is trimethylolpropane triacrylate.

18 (Original): A radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter made from a cross-linked composition, wherein said cross-linked composition is produced by irradiating a crosslinkable composition comprising: (a) a thermoplastic polymer selected from the group consisting of nylon, a copolyester copolymer of poly(1,4-butanediol terephthalate) and poly(alkylene ether terephthalate), a copoly(ether-ester-amide) polymer, and copolymers of polylaurinlactam and polytetrahydrofuran, and a reaction product of an aliphatic polyisocyanate and a polyahl; and (b) a monomer cross-linker comprising acrylate monomer crosslinkers, said monomer cross-linker present in said composition in an amount sufficient to cross-link at least a portion of said thermoplastic polymer to convert said portion from a thermoplastic to a thermoset state upon irradiation of said composition with energy from a radiation source.

19 (Original): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 18, wherein said thermoplastic polymer is a

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thermoplastic elastomer.

20 (Original): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 18, wherein said thermoplastic polymer is a block copolymer containing hard and soft segments.

21 (Original): The radiation crosslinked medical angioplasty balloon or radiation cross-linked medical catheter of claim 18, which is produced by irradiating said cross-linkable composition with energy in the form of free radical initiating or ionizing radiation selected from the group consisting of beta particles, gamma particles, ultraviolet radiation, electron beam radiation, and combinations thereof.

22 (Original): The radiation cross-linked medical angioplasty balloon or radiation cross-linked medical catheter of claim 18, wherein said monomer cross-linker is trimethylolpropane triacrylate.

23. (previously presented): The radiation crosslinked composition made by irradiating the radiation crosslinkable composition comprising: (a) a thermoplastic copoly(ether-ester-amide) polymer and (b) a monomer cross-linker selected from the group consisting of triallylisocyanurate ("TAIC"), triallylcyanurate ("TAC"), and combinations thereof, with energy from a radiation source, with the proviso that the polyamide segments of the copoly(ether-ester-amide) copolymer consist of polyamide Nylon 12 segments.

24. (previously presented): A device fabricated from the radiation crosslinked composition of claim 23 wherein said radiation crosslinked composition is in the form of a device selected from the group consisting of heat shrinkable tubing, heat-shrinkable film, seals, gaskets, and o-rings.

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25. (Withdrawn): The radiation crosslinked composition made by irradiating a radiation crosslinkable composition comprising:

(a) a thermoplastic aromatic polyurethane polymer and

(b) a monomer acrylic or methacrylic cross-linker, and combinations thereof, with the proviso that the monomer acrylic or methacrylic cross-linker is other than trimethylolpropane triacrylate, trimethylolpropane trimethacrylate, and triacrylformal, with energy from a radiation source, wherein said radiation crosslinked composition is in the form of heat shrinkable tubing.

26. (currently amended): An article suitable for sterilization, surface modification, or surface grafting, comprising a cross-linked composition, wherein said cross-linked composition is produced by irradiating, with gamma or electron beam radiation, a crosslinkable composition, comprising: (a) a thermoplastic polymer selected from the group consisting of ~~nylon,~~ a copolyester copolymer of poly(1,4-butanediol terephthalate) and poly(alkylene ether terephthalate), a copoly(ether-ester-amide) polymer, and copolymers of polylaurinlactam and polytetrahydrofuran, and a reaction product of a polyisocyanate and a polyahl; and combinations thereof, and (b) a monomer cross-linker selected from the group consisting of allylic monomer crosslinkers, methacrylate monomer crosslinkers, acrylate monomer crosslinkers, and combinations thereof; said monomer cross-linker present in said composition in an amount sufficient to cross-link at least a portion of said thermoplastic polymer to convert said portion from a thermoplastic to a thermoset state upon gamma or electron beam irradiation of said composition with energy from a gamma or electron beam radiation source, wherein the amount of crosslinked composition is sufficient to increase the tolerance to said sterilization, surface modification or surface grafting of the crosslinked article over that of the article alone without the crosslinked composition, with the proviso that with respect to the

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copoly(ether-ester-amide) copolymer the polyamide segments of the copoly(ether-ester-amide) copolymer consist of polyamide Nylon 12 segments.

27 (Original): The article of claim 26, wherein said article is a medical device.

28 (Previously amende): The article of claim 26, wherein said article has been subjected to gamma or electron beam radiation or heat in an amount sufficient to sterilize that article or wherein said article has been subjected to gamma or electron beam radiation in an amount sufficient to graft or modify the surface of that article.

29. (deleted):

30 (deleted):

31 (deleted):

32. (previously presented): An wholly or partially encapsulated device, wholly or partially encapsulated with a crosslinked composition produced by irradiating a crosslinkable composition comprising: (a) a thermoplastic polymer selected from the group consisting of nylon, a copolyester copolymer of poly(1,4-butanediol terephthalate) and poly(alkylene ether terephthalate), a copoly(ether-ester-amide) polymer, and copolymers of polylaurinlactam and polytetrahydrofuran, and a reaction product of a polyisocyanate and a polyahl; and combinations thereof, and (b) a monomer cross-linker selected from the group consisting of allylic monomer crosslinkers, methacrylate monomer crosslinkers, acrylate monomer crosslinkers, and combinations thereof; with the proviso that for the reaction product of a polyisocyanate and a polyahl the monomer acrylic or methacrylic cross-linker is other than trimethylolpropane triacrylate, trimethylolpropane trimethacrylate, and triacrylformal, said monomer cross-linker present in said composition in an amount sufficient to provide cross-linking of at least a portion of said thermoplastic polymer from a thermoplastic to a thermoset state upon

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irradiation of said composition with energy from a radiation source, and wherein the crosslinked encapsulation composition is expanded to a larger size than the device to be encapsulated, by a heating and forming process, and then cooled to retain the expanded size, said expanded crosslinked encapsulation composition possessing the characteristic of "memory" due to the crosslinked polymer comprising the crosslinked encapsulation composition, and wherein the device to be wholly or partially encapsulated is placed within the expanded shaped object with "memory", and wherein heat is applied to cause the expanded crosslinked encapsulation composition with "memory" to contract and wholly or partially encapsulate the device within.

33 (Original): The device of claim 32, wherein said device is a medical device.

34. (Currently amended): The radiation crosslinked composition made by irradiating the radiation crosslinkable composition comprising: (a) a polyamide/polyether block (PEBA) copolymer and (b) a monomer cross-linker selected from the group consisting of allylic monomers, acrylic monomers, methacrylic monomers and combinations thereof, with energy from a radiation source, with the proviso that the linkages between the hard and soft segments of the polyamide/polyether block (PEBA) copolymer consist of amide linkages and the polyamide segments of ~~the copoly(ether-ester-amide)~~ said polyamide/polyether block (PEBA) copolymer consist of polyamide Nylon 12 segments.

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